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PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY.

MEETING OF MARCH 2, 1909.

Held at the American Museum of Natural History. Vice-President E. B. Southwick in the chair, with fourteen members present.

The librarian reported the receipt of the following exchanges :

Wiener Entomol. Zeitung, XXVIII, No. 1.

Mittheil. Naturh. Mus. in Hamburg, XXV.

Verhandl. d. k. k. Zool. Bot. Gesel. Wien, LVIII, No. 10.

Societas Entomologica, XXIII, Nos. 21-22.

Plans were discussed for compiling a list of the insects of New York State. It was the general opinion that it would be best to use the New Jersey List of Insects as a basis to which additions could easily be made. On motion of Dr. Love, the librarian was empowered to procure an interlinear copy of the New Jersey list to be used by the members in recording data.

The librarian announced that the exchange list was becoming too large and that the Society was receiving a great deal of non-entomological literature. He requested that the exchanges be more restricted. The matter was referred to the publication committee.

Mr. Pollard announced that the Council of the New York Academy of Sciences had granted Mr. Kearfott's request for a grant of \$400.00 to carry on the work of publishing a monograph of the Tortricidæ of the World.

Mr. R. P. Dow spoke on the subject of "A Side Line Study of Larvæ of Several Orders" in which he detailed the work carried on by his brother and himself in detecting the presence of certain chemicals in the bodies of various larvæ. They endeavored to determine to what extent certain characteristic plant acids and juices could be detected mainly by taste. He proceeded to use this as a basis for a theory of classification in which he placed those insects highest which elaborated the more complex materials from their natural foods.

Mr. I. Matausch exhibited several excellent colored drawings of larvæ and adult stages of some Membracidæ, and spoke concerning his experiences, begun during July and August, 1907, in rearing members of this group. He had succeeded in rearing *Camphylenchia curvata*, collected on golden rod, from a very young stage. He remarked that the moulting of this insect takes place during the early morning hours. From observations made in the field he came to the conclusion that it was rather sedentary in habit, remaining on the same stem for long periods of time. He found that ants were especially fond of the exudations of *Vandusia arcuata*, which occurs on the locust. He mentioned the food plants of many of the Membracidæ.

Mr. H. G. Barber exhibited a collection of palearctic Hemiptera recently purchased from Staudinger and Bang-Haas. In his remarks he dealt particularly with the following species of the collection which occur both in Europe and the United

States: *Pentatoma juniperina*, *Nezara viridula*, *Zicrona cærulea*, *Corizus crassicornis*, *Nysius thymi*, *Cymus clavicornis*, *Ischnorhynchus reseda*, *Emblethis griseus*.

Mr. W. T. Davis exhibited two specimens of the southern moth *Pygarctia abdominalis* Grote, from Lakehurst, N. J. One was taken on May 29, 1905, and recorded in the proceedings of the Society for March 20, 1906. The other was collected while sweeping low huckleberry bushes June 13, 1908.

Society adjourned.

MEETING OF MARCH, 16, 1909.

Held at the American Museum of Natural History, with President C. W. Leng in the chair and eleven members present.

Dr. C. L. Pollard invited the Society to participate in a joint meeting with the Brooklyn Entomological Society as guests of the Staten Island Association of Arts and Sciences on Saturday, May 8. The invitation was accepted and arrangements for an afternoon field trip were left with the Outing Committee.

Mr. Engelhardt proposed as an active member Dr. F. E. Lutz, of the American Museum of Natural History. On motion of Mr. Angell the by-laws were suspended and the secretary empowered to cast a single ballot for the election of Dr. Lutz.

Mr. Engelhardt exhibited an interesting series of the Bella moths—*Uletheisa bella* and *U. ornatix*. The former was represented by a selected number of specimens from the eastern United States, showing extensive local variations, besides the varieties known as *hybrida* and *terminalis*. The variety *venusta* was represented by examples from Jamaica, W. I., and Cuba. *U. ornatix* was shown from Texas, Guatemala and Porto Rico. While the specimens from Texas and Guatemala indicate only a slight tendency to variation, those from Porto Rico were remarkable in this respect. One series, beginning with a typical *U. ornatix* was arranged to show a gradual line of variations ending in a good example of *U. bella*. Another series ended with a specimen indistinguishable from the European species *U. pulchella*. All of the specimens from Porto Rico were collected in a sandy region near San Juan during November and December, 1908. A discussion of climatic conditions as a factor in producing variations followed.

Mr. Wm. T. Davis exhibited a great number of oak-apple galls, *Amphibolips confluentus*, which he had found on the ground under three different oak trees on Staten Island, and which had been opened by squirrels for the larvæ within. The galls had been cut off of the trees by the squirrels and about one half of the outer shell and spongy matter in each instance had been torn away to secure the desired larvæ. He also exhibited acorns, hickory and other nuts opened to secure larvæ rather than the kernel itself.

Dr. R. C. Osburn exhibited a collection of over 500 Syrphidæ collected by two friends on the abandoned Hope Trail, British Columbia. One genus, *Pyritis*, described by W. D. Hunter a few years ago, was better represented in the lot than in all the other collections of the world combined.

Mr. John J. Davis, field entomologist, Illinois, spoke of his economic work in the vicinity of Chicago. He mentioned *Calloptistria floridensis* as a pest in green houses. This has been reported hitherto only from Florida. Its larvæ were bright green while on the ferns, but when reared in a tin box were almost black. This was attributed to the degree of moisture present. In this connection Dr. Lutz described

his operations with the larvæ of *Isia isabella*, which were influenced by change of moisture. Many in wet environment were uniformly black, whereas in dry situations the many black bands failed to develop and the larvæ remained unicolorous.

Mr. G. W. J. Angell exhibited a series of the water beetle, *Hydrobius tessellatus*, taken in clear water at Westwood, N. J. These were all normal and uniform, while a single specimen taken in very dirty water was aberrant.

Society adjourned.

MEETING OF APRIL 6, 1909.

Held at the American Museum of Natural History. President C. W. Leng in the chair with seventeen members and one visitor present.

The librarian reported the receipt of the following publications since March 2 :
Cold Spring Harbor Monographs, VII.

Entomologiske Meddeleser, Vol. III, No. 4.

Canadian Entomologist, Vol. XLI, No. 3.

Zeitschr. f. wissenschaft. Insektenbiologie, V, No. 2.

Wiener Entomol. Zeitung, XXVIII, No. 2.

Zoölogical Record, Insects, XLIV.

Charles Janet. Notes extraites des Comptes Rendus des Séances de l'Academie des Sciences, Nos. 16-20.

Charles Janet. Anatomie du corselet et Histolyse des Muscles Vibrateurs, après le vol nuptial, chez la reine de la fourmi.

The Insect World, XIII, Nos. 1, 2.

Deutsche Entomolog. Zeitschrift, 1909, No. 2.

The House-fly. Ent. Circ. 25, No. C., State Dept. Agric.

Mr. Leng spoke of the recent death of Mr. Wm. Edwards and read a brief notice which had appeared in the New York Sun.

Dr. R. C. Osburn spoke on the "Species of the *Syrphus arcuatus* Group." He said that this group of the Syrphidæ was a very difficult one to study, but after examining material from several collections, including that of the American and National Museums and representing in distribution some twenty states and several provinces of Canada, he had found certain well-marked characters by which the species of *arcuatus* and the form *lapponicus* might be separated. These were differences in the venation, characteristic maculation on the frons and differences in coloration of the thoracic pile. The areas of enlarged eye facets in the males were also noted. The differences in coloration were found to be somewhat variable and not so constant a character as those noted above. Specimens illustrating the different forms were shown and the question of the names discussed.

Dr. Osburn also discussed the intergradations of *Scæva* with *Syrphus* and said that the species *pyrastri* L. had been placed by Osten-Sacken in the genus *Cataboma* in his paper on "Western Diptera," but had previously been assigned to the genus *Scæva*. This species had been separated from *Syrphus* on the characters of the frons, the pilosity of the eyes and the venation. Dr. Osburn pointed out that various species in the genus *Syrphus* showed differences as marked as this species in these respects, and he did not believe that such characters could be regarded as being of specific rank, although they might be useful for grouping certain species within the genus *Syrphus*.

Mr. Matusch exhibited some original water color drawings of Membracidae from Rincon Mts., Arizona, collected by Mr. G. Beyer.

Mr. Schaeffer exhibited and pointed out the salient characters of some twenty new species of Coleoptera, the descriptions of which will form a small paper to be published in the Bulletin of the Brooklyn Museum. He exhibited a specimen of *Dytiscus verticalis* with elytra expanded and called attention to the wing-like appendage at the base of each elytron. He also showed specimens of *Pandelelelejus cavirostris*, *robustus*, *submetallicus*, and *Cimbocera conspersa* in which the deciduous mandibular appendages were still present. These appendages are present in the larval stage but are lost in the early life of the imago, leaving a scar at the place where they have been attached. The presence of this scar and the form of the mandibles, which are pincer-like and formed rather for crushing than cutting, is the important character separating the Otiorhynchidae from the rest of the Rhynchophora. He showed also a small branch of *Acacia cornigera* and called attention to the small appendages at the tip of the leaflets, which are called "Belt's bodies." These small appendages contain much albumen and are eaten by ants which inhabit the large, hollow thorns of several species of *Acacia* in tropical America. The ants also feed on the sugary fluid, secreted from extrafloral nectaries, near the base of the petioles. The ants which thus receive shelter and food from the tree are said to protect it by keeping away the leaf-cutting ants.

Mr. Cook told of his experiences in searching for winter eggs of Lycenidae and said that by carefully noting where the female oviposited in the fall, he sometimes succeeded in finding two or three eggs in a day. He had observed *Lycana scudderia* ovipositing on lupine. The female would work its way nervously down the stem, inserting the tip of the abdomen in the axles of the petioles as if ovipositing but actually would not lay an egg until it had reached the second or third node from the base of the stem, and in fact, would sometimes place the egg on grass or other vegetation close by.

The ovipositing of *Chrysophanus thoë* had also been observed, and in company with Mr. Davis, Mr. Cook had just succeeded in obtaining eggs of *Epidemia epixanthe* at Jamesburg, N. J. This species oviposits on the cranberry. In doing so the insect flutters down nervously in an open spot and places the egg low down on the plant, but never on the tips of the vine.

Mr. Davis exhibited a specimen, which had been captured on Staten Island, of the recently described *Plagodis schuylkillensis* Grossbeck.

Dr. Zabriskie said that he had recently been in California and among other interesting things had observed a number of woodpeckers storing acorns in the bark of the oak trees in several localities.

In the discussion Mr. Davis said it was no doubt a great help to the woodpeckers to place the acorns in the holes they made for them for the reason that they could then hold them as in a vise, and open them more easily.

Society adjourned.

MEETING OF APRIL 20, 1909.

Held at the American Museum of Natural History at 8.15 P. M. President C. W. Leng in the chair with twenty-one members present.

The librarian reported the receipt of the following exchanges:

Georgia State Board of Entomology. Circulars, Nos. 6, 7, 8. Bulletins, Nos. 24, 26, 27, 28.

Bulletino della Soc. Entomol. Italiana, XL, Nos. 1, 2.

Canad. Entom., XLI, No. 4.

Zeitschr. f. Wissenschaft. Insektenbiologie, V, No. 3.

Verhandl. d. k. k. Zoolog. Bot. Gesel. Wien, LIX, Nos. 1, 2.

Mr. Dow, of the Field Committee, announced the outing at next Saturday's meeting on Staten Island, at which Mr. Davis will act as a guide.

Dr. Love proposed Dr. Henry E. Crampton, of the American Museum, as an active member of the Society. On motion the by-laws were suspended and the secretary authorized to cast a single ballot for the election of Dr. Crampton.

Dr. Southwick invited the members of the Society to attend an outing of the Torrey Botanical Society to be held at South Amboy, Saturday, April 24.

Dr. Lutz spoke concerning "Experimental Work with *Drosophila ampelophila*." He remarked that this fly has proved to be excellent material for experimental investigation of evolution. He spoke of the method of rearing the fly on over-ripe fruit. It thrives well under laboratory conditions, the life-cycle is short, the number of offspring large and it can be kept breeding throughout the year. Although the present work was started less than three years ago, more than fifty pedigreed generations had been obtained.

Most of the time had been spent in studying the inheritance of abnormal venation. About one third of one per cent. of the flies in nature have an extra vein or part of a vein in the antero-distal portion of either one or both wings. This portion of a vein is frequently no more than a mere speck, but by selective breeding one can get a race of flies in which all of the individuals possess supernumerary veins, and in some individuals the additional vein material almost or quite equals in amount the normal. Also, one occasionally finds wild flies in which the fifth longitudinal vein does not quite reach the margin of the wing. By using these as the starting point of selection, it is possible to get a strain in which it is a common occurrence for most of the veins to stop short at that margin. Although the flies of the pedigreed strain have not been allowed to use their wings for a relatively large number of generations, there has been no degeneration due to disuse. He remarked that, curiously enough, in interbreeding, the sexes selected normal individuals in mating.

In reply to a question from Mr. Leng, Dr. Lutz explained the Mendelian theory.

Mr. Matusch exhibited a number of hand-colored, original drawings of some interesting local species of Membracidae collected by Mr. Davis.

Mr. Leng exhibited a collection of *Brachyacantha*. He sketched the history of the systematic work that has been published on the genus and described the characters by which it is separated from other Coccinellidae. He referred particularly to the various modifications that are found in the ventral segments of the males, and stated that a similarity in this respect apparently accompanies a similarity in pattern of elytral maculation. He closed by describing especially the difference between the species that have been treated by Gorham as varieties of *dentipes* and expressed the opinion that some of these at least should be regarded as valid species.

Mr. Dickerson exhibited two specimens of *Carabus nemoralis*, which he had taken under stones in his back yard in Newark in April, remarking that this was further evidence that this European species was well established in the eastern United States.

Mr. Angell remarked on the introduction and spread of this species.

Mr. Pollard stated that he had collected and examined 47 cocoons of *Samia cecropia* collected near Watchogue, Staten Island, and 50 collected in the outskirts of Brooklyn, and found that of the Watchogue pupæ only one was normal, three were parasitized by *Ophion*, ten parasitized by Braconids, ten parasitized by other insects, nineteen destroyed by fungus, six destroyed by mice, birds, etc.; in the Brooklyn pupæ none was normal, five were parasitized by *Ophion*, eight parasitized by Braconids, seven parasitized by other insects, eleven destroyed by fungus and nineteen eaten by mice, birds, etc.

Society adjourned.

MEETING OF MAY 4, 1909.

Held at the American Museum at 8.15 P. M. with President C. W. Leng in the chair and sixteen members and one visitor present.

The minutes of the preceding meeting were read and approved.

Mr. Pollard announced the final program of the meeting to be held at New Brighton, Staten Island, on Saturday, May 8, under the auspices of the Staten Island Society of Arts and Sciences.

Dr. Lutz announced that at a conference with the librarian, Dr. Tower, he had been informed that all members of the Society would be permitted to borrow from the library any monographs and papers they desired.

Mr. Southwick invited the members to attend a three days' outing, May 28-30, of the Torrey Botanical Club at New Baltimore, Green Co., N. Y.

Mr. C. H. Roberts exhibited all of the known and several new species of the genus *Graphoderes* belonging to the family Dytiscidæ, and gave some interesting notes concerning the results of his study of this genus.

Among other things he said that this genus contained few species and all were of good size. He spoke of the good distinguishing characters in the differences found in the tarsal disks and cupules in the males. The check list of North American Coleoptera, he was certain, was erroneous in respect to this genus. Horn had suppressed *fasciaticollis* Harris, making it a synonym of the European species *cinereus*. After examining two or three hundred specimens of this species, he had come to agree with Dr. Sharp that our *fasciaticollis* is a distinct species. The structural differences were compared by Mr. Roberts. Although *occidentalis* from Winnipeg closely resembles *austriacus*, distinct differences in the tarsal claws of the male would readily distinguish them. He had received from Mr. Leng a number of specimens of a large species of *Graphoderes* from Nova Scotia and New Foundland, which he had at first thought might be Dr. Sharp's *elatus*, but had found differences in the tarsal cupules which made it probable that this was a new species, larger than *elatus*. The real *elatus* he had not seen. He also spoke of the progress he had been making in the study of *Haliplus*. He had been able to separate several new species, differentiated by good characters which had formerly been lumped with other forms. He spoke of the characters used in distinguishing members of this genus.

In reply to Mr. Leng's question as to whether there were any Dytiscidæ common to Europe and the United States, Mr. Roberts replied that the more thoroughly he pursued his studies the more convinced was he that none was common to both countries, with the possible exception of a few strictly boreal species which might be circumpolar. He explained his method of mounting Dytiscidæ for study.

Mr. George Franck exhibited a collection of nearly all the species of *Canonynpha* occurring in the United States, and read some remarks on the genus which are to be printed in the body of the Journal.

Dr. Lutz exhibited, on behalf of Mr. Matausch, some enlarged water color drawings showing the extreme and medium forms of *Microcentrus caryæ*.

Mr. Wm. T. Davis exhibited an acorn of the chestnut oak, the inside of which had become a hollow chamber and enclosed eight gall-like cells, each containing a larva. The specimen was collected at Runyon, N. J., May 2.

Mr. Schaeffer exhibited the nest of the Mexican honey-making wasp, *Nectarina lecheguana*, which he had found in Brownsville, Texas and spoke of the sweet, intoxicating character of the honey.

Mr. Angell exhibited some specimens of *Carabus nemoralis* collected in the Bronx and spoke of the variation in the color.

Society adjourned.

H. G. BARBER,
Secretary.